

Bloom's Taxonomy -

In Action !!!

Evaluation

appraise	criticize	evaluate	support
argue	critique	judge	validate
assess	defend	standardize	verify

Synthesis

build	develop	plan	structure
create	formulate	produce	synthesize
design	originate	propose	

Analysis

analyze	distinguish	infer	separate
deduce	document	interchange	specify
detect	induce	relate	substitute
discriminate			

Application

apply	correct	graph	restructure
calculate	derive	isolate	solve
choose	develop	operate	systemize
classify	employ	organize	transfer
combine	generalize	relate	use
construct			

Comprehension

alter	edit	manipulate	rephrase
change	estimate	modify	represent
compare	explain	paraphrase	restate
complete	extend	predict	revise
conclude	extrapolate	prepare	rewrite
contract	group	rearrange	simplify
demonstrate	illustrate	reconstruct	summarize
describe	integrate	reduce	transform
determine	interpolate	regroup	translate
differentiate	interpret	reorder	vary
draw			

Knowledge

count	identify	place	state
define	indicate	recall	tabulate
designate	list	recite	tally
enumerate	match	recognize	tell
give	name	select	write

*The HOTS

*HOTS - Higher-Order Thinking Skills

Bloom's Taxonomy of Objectives in the Cognitive Domain

Level 1 KNOWLEDGE

The KNOWLEDGE LEVEL is the foundation of all of the other levels. It is based on facts and information. Facts and information are the building blocks of knowledge. Facts and information provide the necessary basis for all other types of thinking. The KNOWLEDGE LEVEL virtually supports the entire cognitive domain.

Define these terms: larva, pupa, metamorphosis.

List the stages in the life cycle of the frog.

Name the five basic food groups.

Name three Plains Indian tribes.

Recall who Daniel Boone was and when he lived.

State the formula for finding the area of a circle

Level 2 COMPREHENSION

The COMPREHENSION LEVEL requires you to attach meaning to facts and information. The COMPREHENSION LEVEL represents the lowest level of understanding. Some ways you can show COMPREHENSION are by explaining or describing or telling about something in your own words.

Briefly explain how frogs contribute to the balance of nature.

Describe the inside of a typical tepee.

Summarize the main points of the President's Inaugural Address.

Translate this sentence: Mon ami, je vous aime.

Retell the story of Snow White in your own words.

Trace the history of the apple in America.

Level 3 APPLICATION

The APPLICATION LEVEL builds on what has been understood and learned at the comprehension and knowledge levels. APPLICATION LEVEL questions require you to use, apply, or transfer what you've learned to other situations. You should be able to demonstrate or show that you've actually learned something.

Demonstrate how you would cut an apple so it is symmetrical.

Conclude which physiological processes in the frog are also present in all animal life.

Show that you understand Newton's "first law" by means of an experiment.

State the rule or principle operating in the following:
 $6 + 3 + 9 = 18$ $3 + 6 + 9 = 18$ $9 + 6 + 3 = 18$

Determine which of the following could have happened to Neil Armstrong on his trip to the moon:

- He could have fallen off the moon into space.
- He could have frozen to death.
- He could have taken a sample of water back to earth.

Level 4 ANALYSIS

The ANALYSIS LEVEL requires you to examine information by looking at its separate parts. ANALYSIS builds on the understanding levels of application and comprehension. It utilizes facts and information acquired at the knowledge level. ANALYSIS requires you to compare, contrast or differentiate - this means looking at separate and discrete components or factors. This level asks that you show how the separate parts are related to each other or to the whole topic being examined.

Analyze principles and factors in Newton's laws which made other laws obsolete.

Contrast the problems of Blacks today with problems they faced in the early 1900's.

Specify at least four ways Daniel Boone was able to overcome problems in the wilderness as he developed the trail through the Cumberland Gap.

Compare the Civil War with a current or recent struggle somewhere in the world. What similarities and differences do you find?

Differentiate between homemade applesauce and the kind you can buy in the store.

Level 5 SYNTHESIS

SYNTHESIS asks you to create something unique. SYNTHESIS asks you to put together or combine what you have already learned, understood, and analyzed into something new and different. This kind of thinking is "divergent" as opposed to "convergent" because there is more than one acceptable response and the answers given are not necessarily predictable. Divergent thinking branches out from the norm or the usual.

Predict what space travel will be like 100 years from now.

Pretend you are an Apache boy or girl seeing a train for the first time. How do you feel as you watch it move along the tracks?

Plan a campaign to get everyone in your class to eat an apple a day for the next 30 days.

Rewrite the Bill of Rights to apply to children at school rather than to people in a nation.

Suppose one of the three little pigs had been a girl. Would the story have been different? How?

Level 6 EVALUATION

The EVALUATION LEVEL requires you to make judgments about the worth, value, or quality of an idea or an item. EVALUATION asks for your choice or opinion, which you should be able to defend and support (1) on the basis of known standards and evidence, or (2) on the basis of standards, values, or criteria that you develop. EVALUATION contains elements of all of the other levels.

In your opinion, does dissecting a frog contribute to your knowledge of the basic physiological life processes of humans? Why or why not?

Decide who you think had a more difficult trip - Neil Armstrong or Christopher Columbus. Defend your answer.
Select the painting which best represents modern art.
Evaluate "blockbusting" as a means of integrating minority groups into a community. Defend your position.

SOME CAUTIONS

1. *The higher levels of learning are not necessarily "better" than the lower levels of learning.*

All of the levels of learning are important. The lower levels support the higher levels, and the higher levels cannot function effectively without the lower levels. Too often, however, the higher levels have been ignored.

2. *Higher level questions/activities are not necessarily more difficult than the lower level questions/activities.*

The higher levels of learning are more complex, but that doesn't necessarily make them more difficult. Low level questions can be hard for some people and easy for others. Likewise, high level questions can be easy for some persons and hard for others. Difficulty depends upon at least two factors:

- What the person answering the question already knows or has experienced.

- The person's learning style

Some people are more inclined toward order and sequence in their learning, others are more inclined toward divergent, creative thinking. This affects what they are comfortable with so far as levels of learning are concerned.

3. *The use of certain process words in the description of an activity will not necessarily guarantee a particular cognitive level.*

You must consider the rest of the words in the description of the activity - the context. You can't just rely on the process word to determine the level. It could be misleading.

4. *Don't get "too hung up" on the particular level of an activity so that you lose sight of the overall value of the need for different levels of activities.*

Just remember: the actual level of the question or activity isn't as important as using both high and low level questions/activities and being sure to go beyond mere recall of knowledge.

Task Oriented Question Construction Wheel Based on Bloom's Taxonomy

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